

with the smaller and tortuous passages above. Recent observations of Bloch show that in oral breathing the air is warmed very little, if any. It is evident that if air of a low temperature be brought in contact with the lower respiratory passages, inflammatory processes may be induced—indeed, would be likely to be induced.

Physiologists state that at least a pint of serum is poured out by the venous sinuses of the nose each twenty-four hours. The inspired air, passing over the nasal mucous membrane, takes up this moisture and enters the bronchi in a state of saturation; therefore it will not take any moisture from the mucous lining of the bronchi. But the dry throat, following so soon after oral respiration, proves that in the mouth there is no provision for supplying sufficient moisture. The membranes soon become dry, and the air passes to the lungs, taking moisture from the bronchial mucous membrane. Deprived of its normal watery constituents, the normal mucous of the bronchi becomes thick and a source of irritation.

As a filtering agent, the nose not only protects the parts below from the irritating qualities of particles of matter, as found in dust and smoke, but to those who believe in the mischievous power of germs it must also act as a germ-filter. The tortuous structures over which the air must pass on its way through the nose makes it altogether probable that all parts of the current of inspired air come in immediate contact with the nasal mucous membrane. It must follow that vast numbers of germs will adhere to this membrane. These germs may be those ever present in all inspired air, or those that may give rise to the gravest forms of disease.

But what is the nature of this nasal membrane? A highly vascular structure, crowded with mucous glands and held to the parts beneath by connective tissue.

To understand the full force of this answer, it is necessary to recall the observations of Metschnikoff on the power of certain amoeboid cells of the body. In

his address before the Alumni of Bellevue Hospital, reviewing the work of Metschnikoff and others, Osler shows how it is altogether probable that there are certain cells in the body—as the white blood-corpuscles, mucous corpuscles, both free and fixed connective-tissue cells—that have the power of taking within them, by means of their amoeboid movements, certain germs. They have the power, also, of destroying or digesting these germs.

In the nasal passages are just those conditions necessary for one of the best battle-grounds so vividly described by Osler and others. On one hand it is the narrow entrance, the gateway, to a great field beyond. The air enters, loaded with the necessary and also with the useless and injurious. On the other hand, notice how Nature has provided for the defence of this point of attack: a tortuous passage, so that the current of air can not pass below without first touching its warm and moist lining. In this lining are the ever-watchful defenders of Metschnikoff, congregated here “to utterly destroy the army of invading germs.” Here, then, is continuously waged one of the great battles of modern biology.

Dr. Roughten, of London, has called attention to this “screening action” of the nose. He believes that it greatly diminishes the prevalence of phthisis. Viewed in this light, we are justified in accepting the new nomenclature, and hereafter speak of the nose as the “modern Pasteur filter.” But this germ-filter can be easily converted into a germ-producer. A layer of dry or thick mucous forms a complete barrier between the friendly phagocytes and the invading enemy.

From what has been said, the following conclusions can be drawn: 1. The nose should be kept clean. 2. All obstructions to nasal respiration should be removed. 3. Mouth-breathers invite diseases of the throat and lungs. 4. Mouth-breathers are more likely to have certain of the diseases caused by the entrance of germs in the body.

If the nose plays so important a part, how can it be kept in a healthy condition?